United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

IN REPLY
REFER TO:

MP-700
ADM-1.10

MAY 1 5 2001

CALFED Bay-Delta Program Office
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Subject: Proposal Solicitation Package (PSP)

Enclosed for your consideration is the PSP for the Fish Screen and Intake Improvements to Coleman National Fish Hatchery Project (Project). This PSP is being submitted in accordance with guidance provided by the Ecosystem Restoration Projects and Programs 2001 PSP Report. The funds requested would be used to cost-share the construction phase of the Project.

The Project is located in Shasta County on the north bank of Battle Creek. Battle Creek is one of the three remaining Sacramento River tributaries in which natural anadromous salmonids continue to exist. Major efforts are currently underway to enhance habitat conditions necessary to restore native runs of salmonids to 42 miles of Battle Creek above the Hatchery under the Battle Creek Watershed Restoration Project. Integral to the successful implementation of the restoration goals is the need to upgrade the hatchery's water intake facilities to be protective of in-stream aquatic resources. A June 1999 assessment of the existing intake system concluded that a number of deficiencies existed and the intakes do not currently meet National Marine Fisheries Service and State of California guidelines for the protection of salmonids at water diversions.

The Project improvements are designed to bring the hatchery up to compliance and include expansion of an existing off-stream intake, construction of a new on-stream emergency intake, and corresponding improvements to water conveyance pipelines. New fish screens will be constructed at both intake locations. The estimated construction cost is $4.5 million for the Project. The Bureau of Reclamation will cost-share $550,000 with the remaining $3,950,000 in funding being requested under this CALFED grant proposal.

Should you require additional information, please contact Men Moore, Project Manager, Bureau of Reclamation, at 916/978-5086.

S. E. Hoffman

Susan E. Hoffman
Regional Planning Officer
Bureau of Reclamation
Mid-Pacific Region

Mary Ellen Mueller

Mary Ellen Mueller, Ph.D
California/Nevada Fisheries Supervisor
Fish and Wildlife Service
California/Nevada Operations Office

Attachment H

Proposal # 2001- L25 (Office **Use** Only)

PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Fish Screen and Intake Improvements to Coleman National Fish Hatchew on Battle Creek
Applicant Name: U.S. Fish &Wildlife Service/U.S. Bureau of Reclamation
Contact Name: Men Moore, Project Manager, US . Bureau of Reclamation, Division of Planning (MP-700)
Mailing Address: 2800 Cottage Way, Sacramento, California 95825
Telephone: 916/978-5086
Fax: 916/978-5094
Email: mmoore@mp.usbr.gov

Amount of funding requested: $3,950,000 over 2 years
Some entities charge different costs dependent on the source of the funds. If it is different for state or federal funds list below.
State cost _____ Federal cost _____

Cost share partners? **J Yes** **No**
Identify partners and amount contributed by each We are soliciting funding for Phase 3 of this project (Construction); following is the cost share for all phases: Phases I & II : Bureau of Reclamation $550,000; U.S. Fish and Wildlife Service $100,000: National Marine Fisheries Service, in-kind services estimated at $80,000
Phase III : Bureau of Reclamation $550,000

Indicate the Topic for which you are applying (check only one box).

- ☐ Natural Flow Regimes
- ☐ Nonnative Invasive Species
- ☐ Channel Dynamics/Sediment Transport
- ☐ Flood Management
- ☐ Shallow Water Tidal/ Marsh Habitat
- ☐ Contaminants
- ☐ Beyond the Riparian Corridor
- ☐ Local Watershed Stewardship
- ☐ Environmental Education
- ☐ Special Status Species Surveys and Studies
- ☐ Fishery Monitoring, Assessment and Research
- **J** . Fish Screens

What county or counties is the project located in? Shasta and Tehama Counties

What CALFED ecozone is the project located in? See attached list and indicate number. Be as specific as possible: Zone 4 N. Sacramento Valley

Indicate the type of applicant (check only one box):

- ☐ State agency
- ☐ Public/Non-profit joint venture
- ☐ Local government/district
- ☐ University
- ☐ Other: _____
- ✓ Federal agency
- ☐ Non-profit
- ☐ Tribes
- ☐ Private party

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☑ Winter-run chinook salmon
- ✓ Spring-run chinook salmon
- ☑ Late-fall run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Delta smelt
- ☐ Longfin smelt
- ☐ Splittail
- ☑ Steelhead trout
- ☐ Green sturgeon
- ☐ Striped bass
- ☐ White Sturgeon
- ☑ All chinook species
- ☐ Waterfowl and Shorebirds
- ☑ All anadromous salmonids
- ☐ Migratory birds
- ☐ American shad
- ☐ Other listed T/E species: _____

Indicate the type of project (check only one box):

- ☐ Research/Monitoring
- ☐ Watershed Planning
- ☐ Pilot/Demo Project
- ☐ Education
- ☑ Full-scale Implementation

Is this a next-phase of an ongoing project? Yes ✓ No ___

Have you received funding from CALFED before? Yes ___ No ✓

If yes,' list project title and CALFED number _____

Have you received funding from CVPIA before? Yes ✓ No ___

If yes, list CVPIA program providing funding, project title and CVPIA number (if applicable):

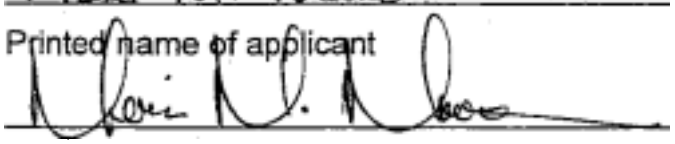
In FY 98 and 99 AFRP funds amounting to $301,174 were received. These funds were used for interim intake improvements and development of the long-term intake alternatives (ie., three components 99LB1 $8,174; 98LC1a $224,000; and 98LC1b $69,000).

By signing below, the applicant declares the following:

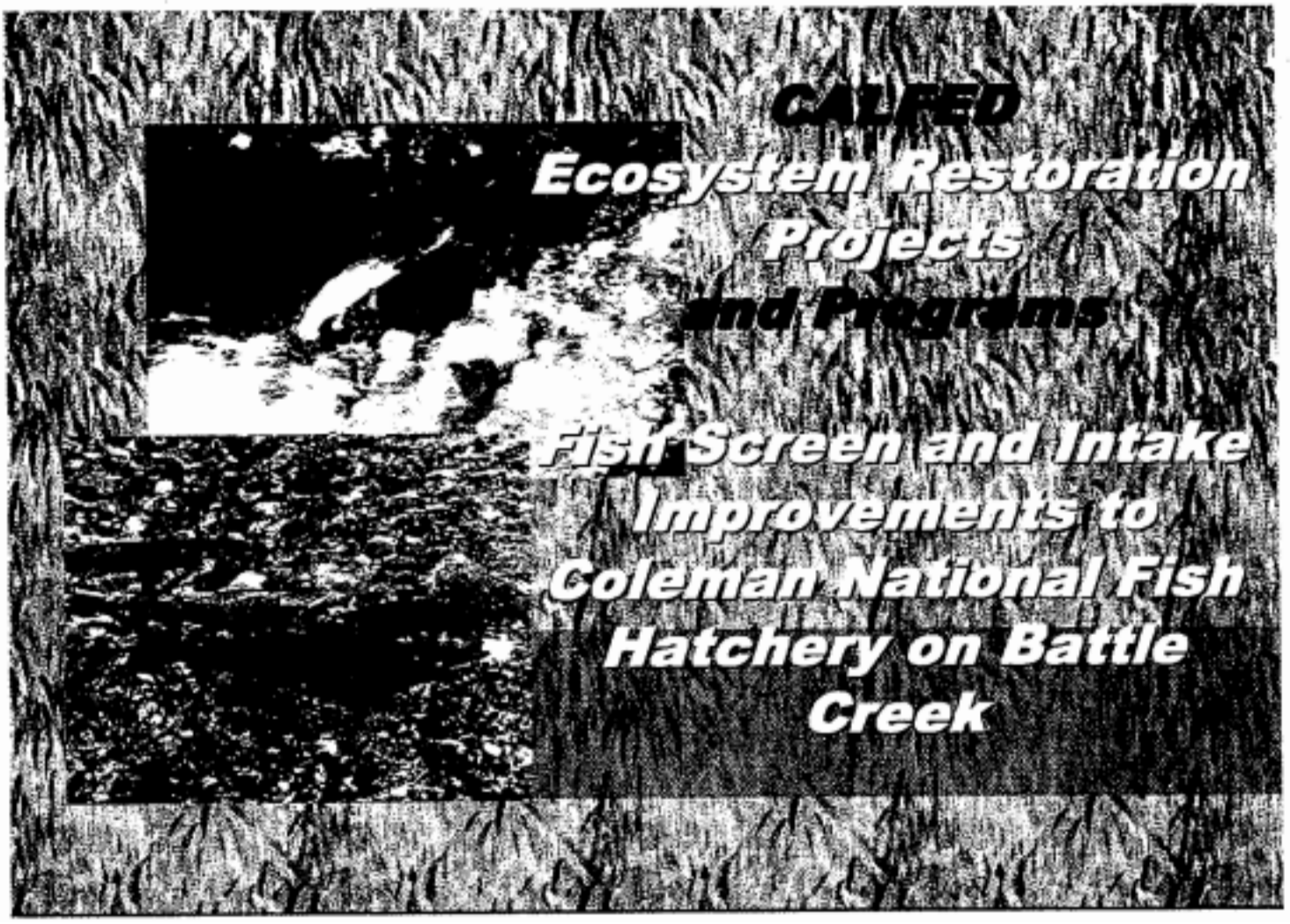
- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section **2.4)** and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

MERI M. MOORE

Printed name of applicant



Signature of applicant



Submitted by:

U.S. Fish and Wildlife Service, Anadromous Fish Restoration Program
Northern Central Valley Fish and Wildlife Office
70950 Tyler Road
Red Bluff, CA 96080
and
U.S. Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825

In cooperation with:
National Marine Fisheries Service
Habitat Conservation Division
777 Sonoma Ave #325
Santa Rosa, CA 95404

MAY 15, 2000

EXECUTIVE SUMMARY

Project Title: Fish Screen and Intake Improvements to Coleman National Fish Hatchery on Battle Creek

Co-Applicants: U.S. Fish and Wildlife Service, Northern Central Valley Fish and Wildlife Office, 10950 Tyler Road, Red Bluff, California 96080; Phone: 530/527-3043 Fax: 530/529-0292; jim smith@fws.gov; and U.S. Bureau of Reclamation, Mid-Pacific Region, 2800 Cottage Way, Sacramento, California 95825; Phone: 916/978-5086 Fax: 916/978-5094; rnrnoore@mp.usbr.gov

Collaborators: National Marine Fisheries Service, 777 Sonoma Ave #325, Santa Rosa, California 95404

Funding Requested: $3,950,000 over a 2-year period starting in 2001

This proposal is for cost-share funding of Phase III (Construction) of a project to construct fish screens and improved water intake structures at the Coleman National Fish Hatchery (Hatchery), in Shasta County, California, on the north bank of Battle Creek. Phase I (Planning and Environmental Compliance) and Phase II (Final Design), will be funded by the U.S. Bureau of Reclamation ($550,000), and U.S. Fish and Wildlife Service ($100,000), with in-kind services provided by National Marine Fisheries Service (estimated at $80,000). A portion of the Phase III funding will be provided by the Bureau of Reclamation ($550,000), and the remaining $3,950,000 is requested under this proposal.

Battle Creek is one of the three remaining Sacramento River tributaries in which natural anadromous salmonids continue to exist. Major efforts are underway to enhance habitat conditions necessary to restore native runs of salmonids to 42 miles of Battle Creek above the Hatchery under the Battle Creek Watershed Restoration Project. This restoration effort consists of 19 separate actions, and received $28 million from CALFED's Ecosystem Restoration Program in 2000. Integral to successful implementation of the restoration goals is the need to upgrade the Hatchery's water intake facilities to be protective of in-stream aquatic resources. A June 1999, assessment of the existing intake system concluded that a number of deficiencies existed, and the intakes do not currently meet Federal and State guidelines for the protection of salmonids at water diversions. Intake improvements must be made prior to restoring a native fishery in the watershed to avoid adverse impacts and loss of federally listed and rare fish species in the intake structures.

Prior planning efforts identified 10 intake alternatives, all designed to meet specific flow and fish protection requirements. Evaluation criteria were used to rank the alternatives and identify a preferred design. The preferred alternative best meets the Hatchery's needs, while also meeting the goals of the Battle Creek Watershed Restoration Project. Environmental compliance and permitting activities have commenced under Phase I of the project, and a draft Environmental Assessment/Initial Study is due in September 2000. Permitting, design and construction is anticipated to take 3 years to complete. This funding solicitation if for Construction (Phase III) of the project only and does not include environmental compliance and biological monitoring, environmental mitigation, and land acquisition.

Project Description

1. Sfatement of the Problem

Problem

The Coleman National Fish Hatchery (Hatchery) located on Battle Creek in Shasta County, is a federal facility built in 1942 as mitigation for the construction of Shasta Dam and Reservoir (see Figures 1 and 2). Its founding purpose was to help preserve significant runs of chinook salmon threatened by the loss of natural spawning areas on the Sacramento River.

Battle Creek is recognized as one of the three remaining Sacramento River Tributaries in which natural spring-run and winter-run chinook salmon, and steelhead trout continue to exist. Past hydroelectric development and hatchery operations have seriously reduced annual runs of naturally reproducing anadromous fish in Battle Creek: The Hatchery's need for a broodstock collection facility and the need for a disease-free water source led to partial blockage of upstream migrating adult fish above the Hatchery barrier weir. Additionally, inadequate minimum in-stream flow provisions in hydropower facilities Federal Energy Regulatory Commission (FERC) licenses, resulted in inadequate flows to support healthy fish runs.

In 1997, the Battle Creek Working Group (consisting of state and federal agencies, fishery, ,environmental,local, agricultural, power and urban stakeholders) was formed to pursue environmental restoration activities in the Battle Creek Watershed.. The Battle Creek .workgroup sought to open 42 miles of Battle Creek to winter and spring-run chinook; and steelhead. Accomplishing this requires correcting fishery passage issues associated with six diversion dams, unscreened diversions, and inadequate stream flows. The Battle Creek Working Group, Pacific Gas and Electric Company (PG&E), state and federal resource agencies, and other interested parties have been working on solutions to these problems in the watershed. In early 1999, a settlement agreement was negotiated regarding removal of several diversion dams on Battle Creek and increases in the minimum flow rates above the Hatchery. In support of these efforts, two Battle Creek projects were recently funded by CALFED's Ecosystem Restoration Projects and Program: (1) Improving the Upstream Ladder and Barrier Weir at Coleman National Fish Hatchery to Facilitate Fisheries Restoration in Battle Creek ($1,663,400 over 3 years); and Proposed Battle Creek Chinook Salmon and Steelhead Restoration Project ($28 million over 8 to 10 years). The 1999 Annual Report for the CALFED Bay-Delta Program' documents the importance of the Battle Creek Project in improving fish passage to historical habitats. The remaining issue linked with the watershed restoration effort is adequately fish screening existing diversions within Battle Creek.

A June 1999 assessment of the existing intake system[2] concluded that a number of deficiencies existed, and the on-stream intakes do not currently meet National Marine Fisheries Service (NMFS) and State of California guidelines for the protection of salmonids at water diversions. Facility improvements and fish screening of the Hatchery water

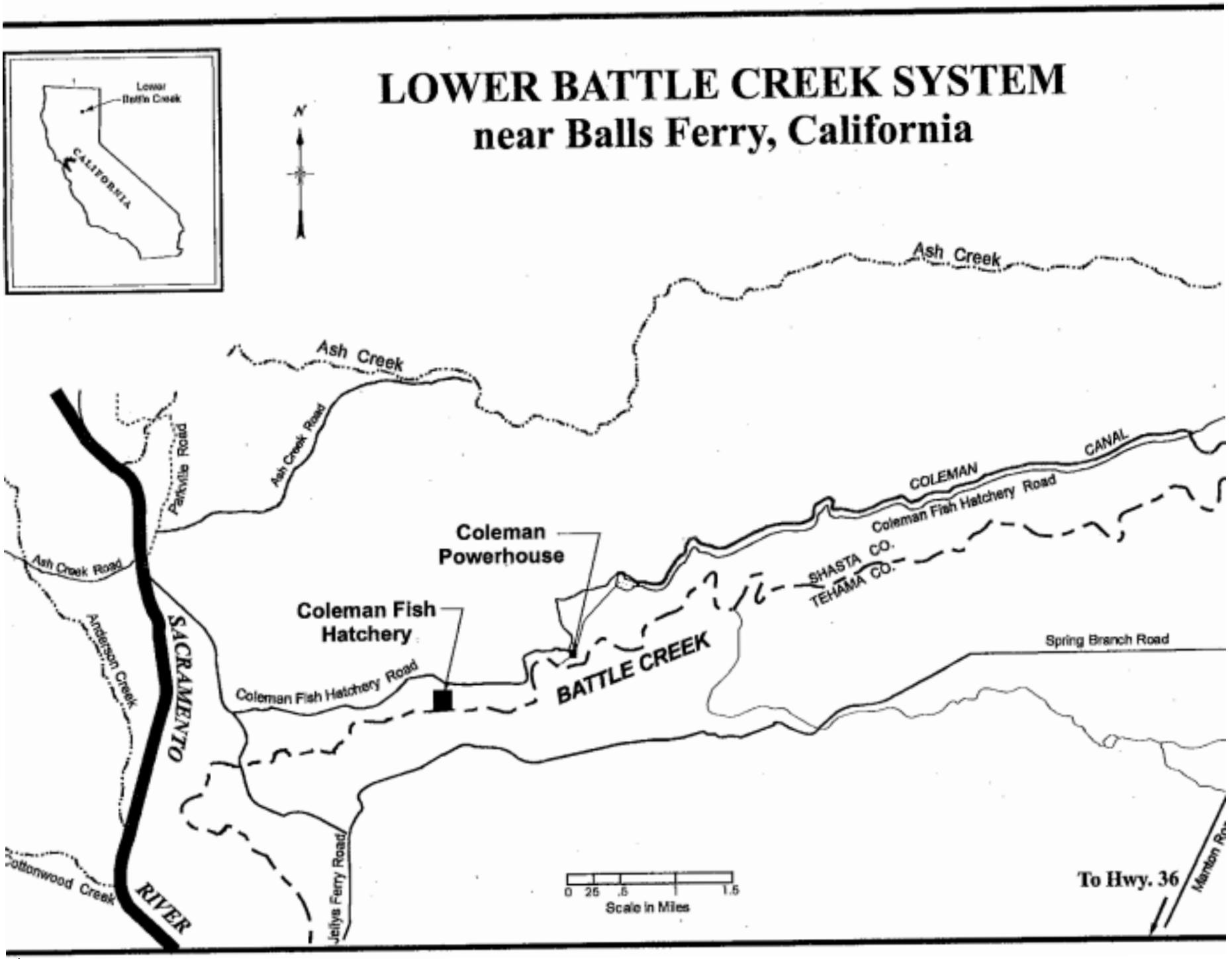
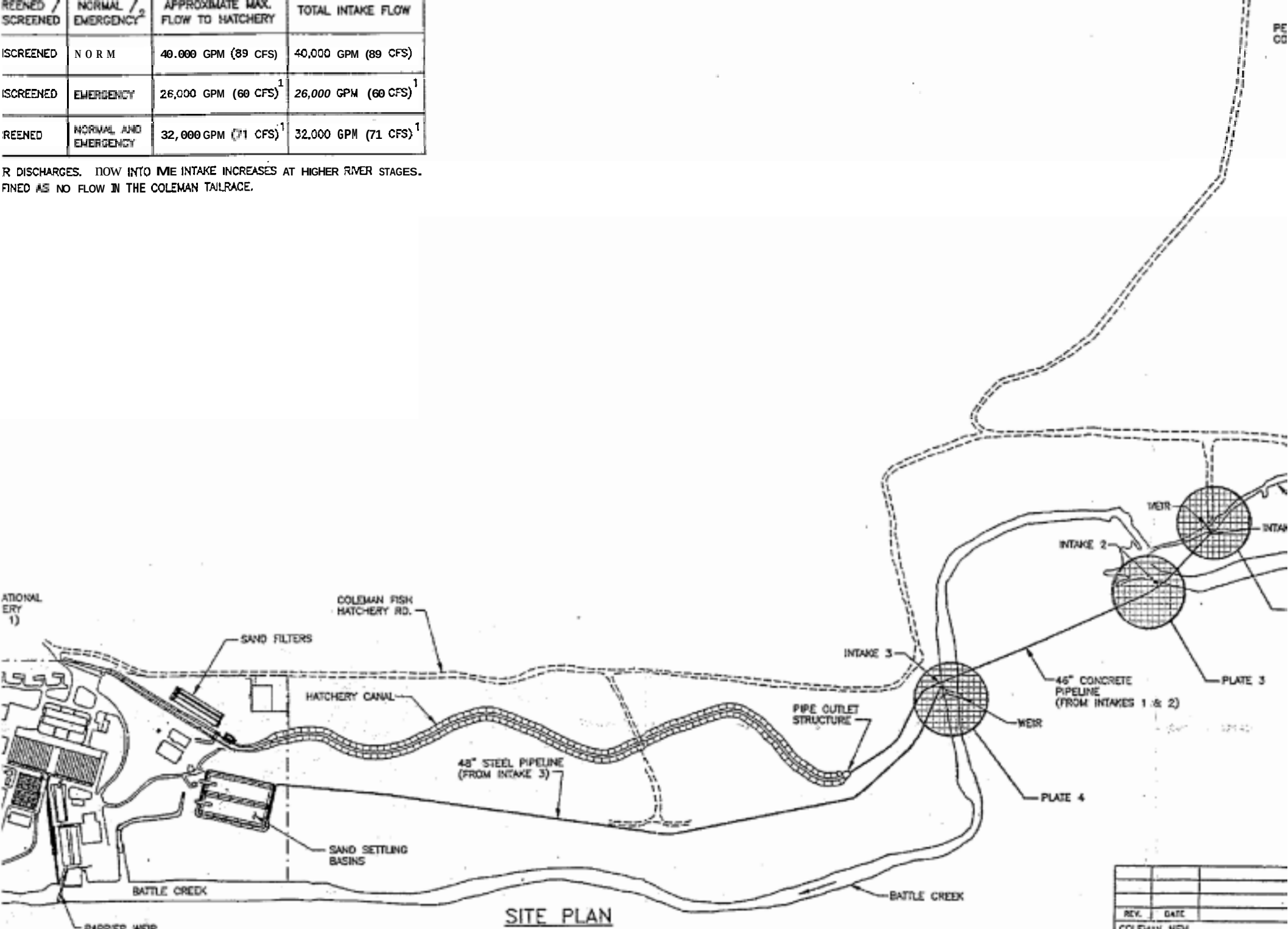

LOWER BATTLE CREEK SYSTEM
near Balls Ferry, California
Lower Battle Creek
CALIFORNIA
N
Ash Creek
Ash Creek
Ash Creek Road
Parkville Road
COLEMAN
CANAL
Coleman Fish Hatchery Road
Coleman Powerhouse
SHASTA CO.
TEHAMA CO.
Ash Creek Road
Coleman Fish Hatchery
Anderson Creek
SACRAMENTO
RIVER
BATTLE CREEK
Spring Branch Road
Coleman Fish Hatchery Road
Jellys Ferry Road
Cottonwood Creek
0 25 .5 1.5
Scale in Miles
To Hwy. 36
Manton Ro

Figure 1

REENED / SCREENED	NORMAL / EMERGENCY[2]	APPROXIMATE MAX. FLOW TO HATCHERY	TOTAL INTAKE FLOW
ISCREENED	N O R M	40.000 GPM (89 CFS)	40,000 GPM (89 CFS)
ISCREENED	EMERGENCY	26,000 GPM (60 CFS)[1]	*26,000* GPM (60 CFS)[1]
REENED	NORMAL AND EMERGENCY	32,000 GPM (71 CFS)[1]	32,000 GPM (71 CFS)[1]

R DISCHARGES. NOW INTO ME INTAKE INCREASES AT HIGHER RIVER STAGES.
FINED AS NO FLOW IN THE COLEMAN TAILRACE.



SITE PLAN
EXISTING HATCHERY WATER SUPPLY SYSTEM

200 150 100 50 0 300 60
Scale in Meters | Scale in Feet

REV. | DATE

COLEMAN NFH

INTAKE STUDY

EXISTING

Overdrup
CIVIL, INC.

diversion intakes are an important component to successful restoration of naturally reproducing salmonids in the Battle Creek watershed, and have been identified in the Anadromous Fish Restoration Program Plan[3] Actions 5 and 8.

Following release of the June 1999 Intake Alternatives Study, interim measures were implemented to minimize fishery impacts at the existing intakes. However, these are not considered long-term solutions because the existing infrastructure no longer meets the Hatchery's water needs for reliability and quantity, and some of the protective measures have been only marginally successful. Of 10 intake design alternatives evaluated in the study, one design was deemed superior in meeting the Hatchery's water needs, while also meeting the goals of the Battle Creek restoration effort. The study did not specify a fish screen design, and several design options will be analyzed for effectiveness and cost under Phase I and II of the project. The evaluation of the hatchery water supply requirements determined that to meet potential future increases in hatchery water demands, any new facilities or upgrades to existing facilities should provide a total of 70,000 gallons per minute (gpm), 160 cubic feet/second (cfs), to the hatchery with 6,000 gpm, 14 cfs, towards meeting downstream water rights on the hatchery canal.

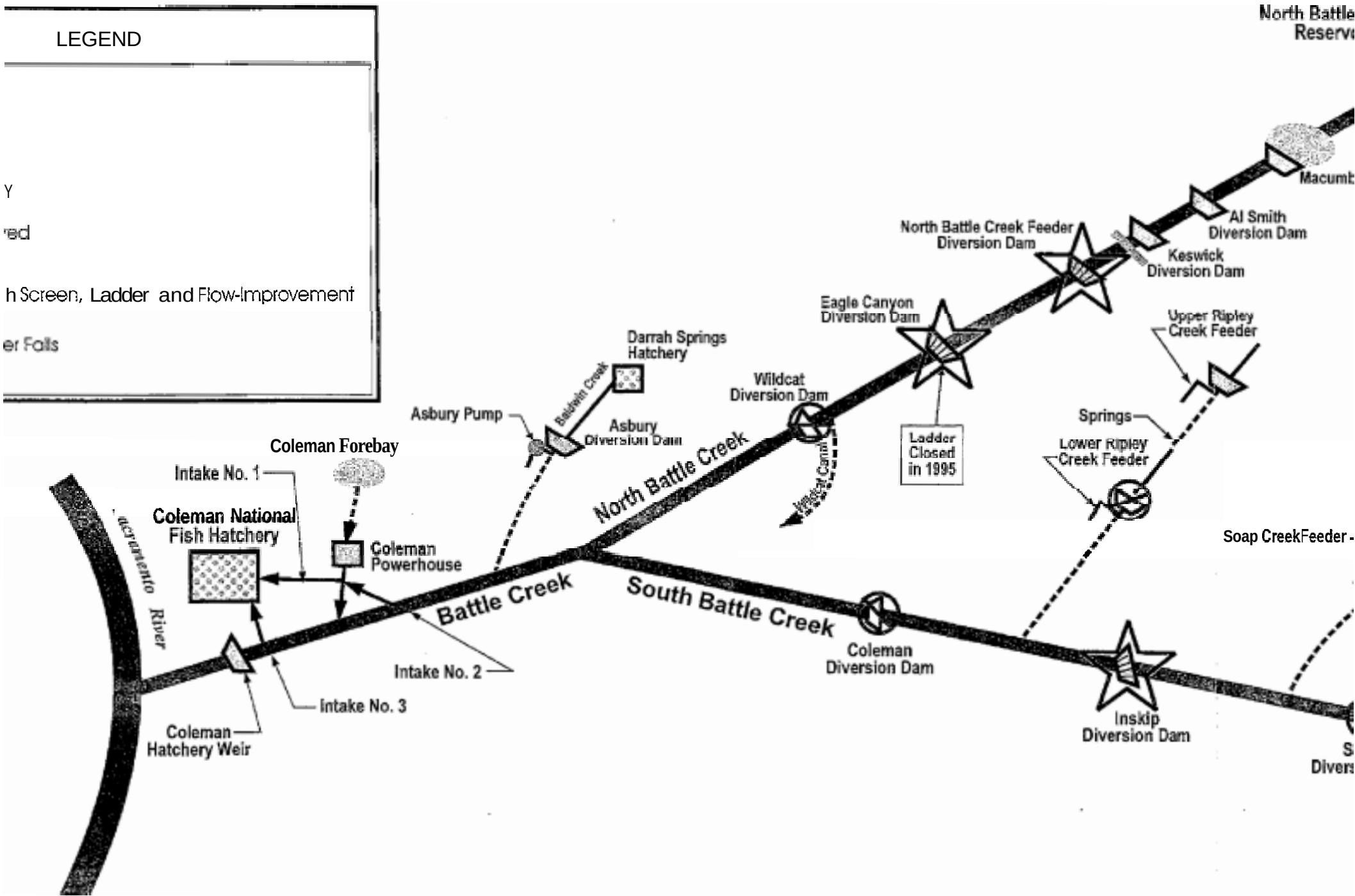
Environmental compliance and permitting activities have commenced under Phase I of the project, and a draft Environmental Assessmenfflnitial Study is due in September 2000. Phase II involves preparing final project designs, and Phase III is project construction. This solicitation is for funding assistance associated with Phase III of the project.. Construction activities should begin late in 2001 and early2002 in order to meet the implementation schedule for the Battle Creek Restoration Project.

Conceptual Model

See Figure 3 for a conceptual model showing the relationship of the Coleman Hatchery Fish Screen and Intake Improvement Project to the Battle Creek Watershed Restoration Project.

The restoration of Battle Creek provides a unique opportunity to restore a population of the State and Federally listed winter-run chinook salmon in a watershed that is resistant to drought[4567]. Restoration efforts will also benefit other native fish species, including the spring run chinook salmon and Central Valley steelhead. The purpose of the restoration project is to increase flows in Battle Creek and Baldwin Creek through reduction in diversions to PG&E's Battle Creek Project for hydropower generation. Increased flows in Battle Creek are needed to provide adequate emigration, migration, holding, spawning and rearing habitat for anadromous salmonids. As part of the Battle Creek Restoration Project, 5 dams will be removed, and 3 existing hydropower facilities improved with fish screens, fish ladders, and flow improvements. These actions will result in improved water quality and access to 42 miles of historical anadromous fish habitat. These actions are designed to facilitate reintroduction of winter-run chinook salmon into Battle Creek, and present the opportunity for the development of a founder population[7]. This action is significanton a population level because winter-run chinook salmon are subject to catastrophic loss on Sacramento River spawning grounds during periods of extreme drought[8].

Improvement Project to the Battle Creek warersnea Restoration



The Coleman Hatchery is at the mouth of the Battle Creek watershed as it enters the Sacramento River. Improvements to the Hatchery's aging intake facilities are necessary to avoid attracting adults and entraining and/or impinging smolts utilizing areas higher in the watershed. The intake alternative pursued under this investigation, increases the capacity of existing Intake 1 to supply all current and potential hatchery demands directly from the Coleman Powerhouse tailrace, which is an off-stream and fish free environment, thus minimizing adverse impacts to the stream fishery. One back-up, gravity feed intake would be located on Battle Creek for use only in emergency situations when the powerhouse or Coleman Canal are shut down. Both intakes will require fish screening.

Hypothesis Being Tested

Due to the presence and/or restoration efforts to reintroduce federally listed species in the Battle Creek watershed, protection measures at the Hatchery intakes must encompass fishery objectives at both the population and individual level. Protective methods for the intake facilities other than screening have not been pursued under this project, due to a lack of scientific information on alternative methods, and current regulatory requirements that specify screening as the only recognized method of fish protection at intakes greater than 25 cubic feet/second (cfs). In discussions with NMFS (Jim Bybee, NMFS, pers. comm. May 1, 2000), the agency will soon issue a 4-D Rule for the Central Valley Steelhead that will exempt screened diversions from consultation under the Endangered Species Act. In light of these circumstances, the project proponents have focused hypothesis testing to analyzing different screening methods, with the goal of selecting the most effective and cost efficient screen designs for the intake facilities.

Screening of water intakes for fish and debris has historically been approached by a variety of different methods. Debris screening is accomplished *to* preclude fioating or entrained organic material from entering water supply systems where it can clog filter systems, pipes, and other critical components. The other purpose for screening intakes is to prevent fish from entering the intakes. At irrigation diversions, entrained fish can become stranded in canals or pipelines, while at hatchery intakes, they can be injured in the water supply systems or be introduced into the rearing ponds. For migrating smolts (juvenile fish transitioning biologically from fresh to saltwater phases), the delay associated with entering intakes without timely return to the main river can be fatal.

Ten intake design alternatives were identified in the Intake Alternatives Study, of which one was selected as superior in meeting the Hatchery's water needs and Battle Creek Watershed restoration objectives. The preferred alternative was chosen on the basis of best meeting criteria for water quality and quantity, system reliability, redundancy, access, fish protection, maintenance, long-term performance, and water rights issues. Prior studies did not identify a preferred fish screen design and several fish screening methods will be evaluated for long-term effectiveness and cost under Phases 1 and II of the project.

Screening designs under consideration include:

- vertical plate screens
- rotary drum screens
- vertical and inclined traveling screens
- horizontal plate screens (fixed)

- horizontal plate screens (retrievable)
- Coanda-effect screens
- prefabricated fish screens

Adaptive Management

The construction of fish screens at CNFH is unique to other fish screen construction project in the Central Valley. Instead of screening a diversion that provides water for agricultural purposes, this project provides water to the only remaining mitigation feature for Shasta Dam -- Coleman National Fish Hatchery.

The project compliments watershed restoration efforts in Battle Creek to reintroduce naturally reproducing salmonids in the upper watershed, and will facilitate survival of migrating and resident fish in Battle Creek. Currently there are three alternative outcomes for naturally produced fish in the Battle Creek watershed:

1) The juvenile could be diverted into one of six canals that supply water to a hydropower generating plant (i.e. death in the turbines or capture in the canal sportfishery);

2) The juveniles could be diverted into one of the hatchery's intakes where several variations of consequences could occur. For example, if the fish were diverted at Intake 2, they would travel through a 46-pipeline, then a canal, then either through a pump station into the ozone water treatment system (i.e. death) or continue downstream with water that is intended for agricultural purposes. If the fish were 'diverted at Intake 3, they could go into a 46-pipeline then into the sand trap.. Entrapment in the sand trap delays outmigration until the annual maintenance of the canal/sand trap. In **1999,** for example, approximately **150** juvenile salmonids were captured in the sand trap; .approximately 80% of these were rainbow trout *(Oncoryhnchusmykiss)* (John Scott, (USFWS) pers. com. 2000); and

3) Successful outmigration of juveniles occurs. .Currently,.natural production of salmonids is limited in Battle Creek from chronic habitat degradation caused primarily by hydropower generation and impacts on natural fish production from water diversion at Coleman NFH intakes are considered minimal **(1998** abbreviated Biological Assessment).

Predicted increases in population sizes of chinook salmon and steelhead in Baffle Creek are as follows:

Winter-run **chinook salmon**	2.500
Spring chinook salmon	2,500
Fall chinook salmon	4,500
Late-fall chinook salmon	4,500
Steelhead	**5,700**

These estimates consider full implementation of Actions 1-8. They are based on the amount of **potential spawning substrate in reaches where different species/ races would be expected** to **spawn (Kondolf and Katzel 1991), the amount of substrate required per redd (Reiser and Bjornn 1979). and the professional judgement of DFG biologists.**

Source: *USFWS* ***19959***

However, in the near future, as passage improvements are finalized and salmon/steelhead access newly opened habitat in upper Battle Creek, a proportional increase in salmonid production is expected in the watershed.

The *Fish Screening Criteria for Anadromous Salmonids* have been revised by National Marine Fisheries Service (NMFS) (March 1997)[10] and California Department of Fish and Game (DFG) (April 1997)[11]. The hatchery is ta'king proactive measures to insure that its diversions are compliant with these guidelines (USBR 1998[12]). The intake improvement team developed a *two* step approach to solve the

fish screen inadequacies at CNFH (USBR 1998). Interim repairs have been implemented until long-term solutions are developed. Components of the interim intake improvements include: a flapgate at Intake 2 to prevent access by juvenile outmigrants; and, installation of screening devices at Intake 3 (personal communication, Tricia Parker, FWS). The interim screening devices at Intake 3 are considered temporary until long-term solutions are developed. One screen does not meet the revised 1997 NMFS/DFG screening guidelines, and the other is considered experimental (USBR 1998).

Educational Objective

The Coleman Fish Hatchery participates heavily in public outreach and educational programs. The hatchery hosts tours for local schools in the area on an ongoing basis and facilitates a 'Teach the Teachers Program' in June of each year. The hatchery also hosts a yearly one-day 'Annual Return of the Salmon Festival' in mid-October with an average attedance of approximately 9,000 people. Included in ongoing outreach efforts, hatchery personnel will educate the public on the benefits of the fish screen and intake improvement project.

Proposed Scope of Work

General Description

The project alternative selected for funding under this grant solicitation was chosen based on its rating to a set of evaluation criteria established to meet project goals (refer to section on "Feasibility"), This alternative is mosi'protective of Battle Creek aquatic resources, while also meeting the Hatchery's water supply objectives.

'Description - The capacity of flow through intake 1 will be increased from 40,000 gprn (89 cfs) to 70,000 gpm (156 cfs) to meet all of the future projected flow requirements for the hatchery and downstream water rights. Intake 2 will be abandoned. Intake 3 will also be abandoned, but the existing pipeline from Intake 3 to the sand settling basins will be preserved. The additional 30,000 gpm (67 cfs) added to the capacity at Intake 1 is routed to this pipeline, replacing the flow from Intake 3. To provide an emergency backup when flow to Intake I is interrupted, a new intake will be established on Battle Creek adjacent to the powerhouse with it's supply pipe connected to the 46-inch pipe from Intake 1. Since the new intake is an emergency intake and would be operated infrequently, the amount of hatchery supply capacity at the intake is set at 40,000 gpm (89 cfs). It is anticipated that use of the emergency intake would likely be for periods of up to one week. The assumption is that the hatchery would be operated under "emergency" conditions in such a way that total water demand would be 40,000 gpm (89 cfs) or less.

Task 1

Task 1a:

- Rehabilitation of existing intake structure including racks and control gate
- Construction of a new intake structure for the new 36-inch pipe adjacent to the location of the existing intake structure. The new intake would be similar in design to the existing intake.
- Construction of new security fencing at the intake

Task 1b:

- Replacement of the existing stoplog weir adjacent to the intake.

Task 1c:

- Construction of a fish barrier structure on the tailrace about 20-30 feet upstream of the confluence of the tailrace and Battle Creek.
- Roadway access improvements to the fish barrier structure. Improvements would include grading and application of a crushed gravel surfacing.

Task 2

- Demolition of existing Intake 2 racks, water control gate, and concrete box.

Task 3

Proposed improvements to the water conveyance system (pipeline, canal water control structure, and canal) are intended primarily to extend the life of the system to meet the 50-year design life and to add additional capacity to the system. They include the following:

- Remote or visual inspection *of* the existing supply pipeline
- Rehabilitation or replacement *of* the existing manually operated water control gate and *operator* at the canal water control structure
- Rehabilitation *of* the hatchery canal
- Construction *of* a new 36-inch pipeline parallel *to* the *existing 46-inch* pipeline. The pipe would extend from Intake 1 to the approximate location of Intake 3 and would be connected to the existing 48-inch pipeline at a location near Intake 3.
- Demoiition of the existing Intake 2 structure including racks, water control, gate, and concrete box.

Task4

Task 4a:

- Demolition of Intake 3 structure including the sediment sluice, fish ladder and weir.

Task 4b:

- The existing equipment building will be demolished.

Task 5

Task 5a:

- Construction of a new concrete intake and fish screening structure on the right bank.

Task 5b:

- Construction of a small equipment building at the intake

Task 5c:

- Electrical Dower distribution improvements.
- Access road construction from Coleman Powerhouse to the new intake.
- Bank improvements to stabilize the right bank around the new intake.
- Acquisition *of* easements or purchase of property.
- Construction of security fending at the intake.

Task 6

Includes contractor mobilization of the project site for work at these separate locations. This work involves trailers, fencing, toilets, phones, and security for up to 18 months. The demobilization includes the removal of project trailers and support equipment.

Task 7

Bid solicitation includes final plan and specification printing, contractual paragraphs added and bidder selection. This is in support of award to a responsible contractor that will carry out Tasks 1 through 6. Engineering support conducted during bid solicitation includes answering questions from bidders and correcting documents through the amendment process. Once awarded, engineering will continue to support construction concerning any changes.

Task 8

Construction management will include project inspection, lab work, surveying, contract administration and coordination.

a. Location and/or Geographic Boundaries of the Project

Battle Creek flows into the Sacramento River at river mile 272 near the town of Cottonwood and forms the border between Shasta and Tehama counties. The proposed project is within Calfs ecozone number 4: North Sacramento Valley, latitude 40 23' 54"N, longitude 122 8'43" W, USGS Quad - Ball's Ferry, California (see Figure 4), Environmental compliance and permitting activities, and design data collection has recently commenced under Phase I of this project, and a draft Environmental Assessmenfflnitial Study is due in September, 2000. Phase II will involvefinal design of the selected alternative, and Phase III will be construction of the new intakes'and fish screens, which is scheduled to begin in the spring of 2002.

b. Approach

After completion of the construction documents, the project would be opened for bidding by contractors resulting in a contract award for construction. It is assumed that this process would require approximately 4 months.

The construction is complicated by the limitations of the in-river work period and the requirement that the hatchery be able to meet its water demand at all times. In-river work items can only be performed between June 15 and September 15. These include the following (items with an asterisk also require that the hatchery operate temporarily on one intake):

- Installation of a new intake and sing wall adjacent to the existing Intake 1*
- Demolition of the weir at Intake 1 and installation of a new weir structure*
- Installation of a new tailrace fish barrier
- Demolition of Intake 2 and associated pipe connection*
- Two river crossings for the new 36" supply pipe
- Removal of the existing USBR screen at Intake 3
- Demolition of Intake 3 and the associated weir and fish ladder*
- Installation of a new intake structure near the Coleman Powerhouse
- Installation of a fish bypass outfall
- Assorted riprap and other bank improvements

The previous list is based on the assumption that the powerhouse bypass installation, including the forebay intake, the bypass pipe, and the tailrace outfall would not be

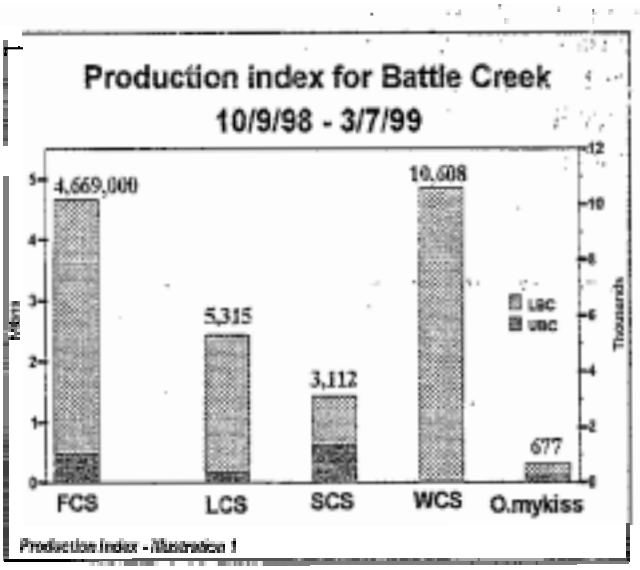
considered in-river work and could be performed anytime. Additional items which would not require in-river work, but would require the hatchery to temporarily operate on a single intake, would be performed between May 1 and August 31. These items would include:

- Rehabilitation of the control gate and trashrack at the existing Intake 1
- Inspection of the **4 6** supply pipe from Intakes 1 and 2
- Rehabilitate control gate at the hatchery canal and regrade the canal

Attempting to perform work items in a single season would be an expensive and risky undertaking for the hatchery. Complicating this would be the need to keep one intake operating throughout the entire construction period. Therefore, the construction schedule (see Table *2)* assumes that the work would be spread between two in-river work periods with out-of-river work being performed in the interim.

The entire construction period would be about 20 months, extending from about May 1 to near the end of January 2003. Additionally, there would likely be some time before and after this period for contractor's mobilization, demobilization and clean-up. The entire project from a decision to proceed to end of final construction would b.e approximately two years. This assumes that the decision to proceed is timely and that schedules are adhered to, otherwise the in-river work period restrictions could force the project to slip an additional year.

c. Monitoring **and** Assessment **Plans**



Monitoring of juvenile salmonid production has been conducted in Battle Creek since October of 1998. Following the standard protocol described by the Comprehensive Assessment and Monitoring Program (CAMP), juvenile salmonid abundance was measured using rotary screw traps. A production index (Illustration 1) was developed by Craig Martin (USFWS Northern Central Valley Fish and Wildlife Office). This CAMP funded monitoring program was developed in response to Section 3406(b)(16) of the CVPIA. CAMP serves to evaluate the effectiveness of the CVPIA in restoring anadromous fish production. Measurements of juvenile salmonid abundance will be used as a tool to assess the relative effectiveness of multiple restoration actions (i.e. the effectiveness of removing, laddering and/or screening diversions) for improving passage in Battle Creek). This 1998-1999 production index for Battle Creek will later be compared to juvenile production that occurs after the hydropower (MOU 1999)[13] and hatchery intake passage improvements have been completed. Note that this production index shows both lower Battle Creek (LBC) – near the confluence with the Sacramento River – and upper Battle Creek (UBC) sites -- above CNFH.

d. Data Handling and Storage

Because this grant solicitation is for project construction, data handling and storage is not specifically addressed. A biological monitoring plan will be developed as part of Phase II of the project to assure regulatory compliance with screening standards and monitor fish screen effectiveness.

e. Expected Products/Outcomes

The following are work products associated with bid solicitation and construction management tasks outlined above:

- Final plans and specifications
- Bid documents
- As-built drawings
- Final inspection report
- "L29" monthly construction progress reports published by the USBR, Mid-Pacific Region Construction Office, Willows, CA
- Biological monitoring plans for environmental compliance and fish screens, USFWS, Northern Central Valley Fish and Wildlife Office, Red Bluff,.CA

f. Work Schedule (See Table *2* attached).

g. Feasibility

The project alternative selected for funding under this grant solicitation was chosen based on its rating to a set of evaluation.criteria'established to meet project goals. Criteria include:

- Water *quality* and quantify The quality and quantity of water delivered from the intake system shall meet the operational requirements of the hatchery
- System reliability: The intakes shall have a high degree of reliability for all reasonably anticipated .environmental and operational conditions, including anticipated .changes to the water supply configurations in the upper watershed due to the Battle Creek restoration efforts, changes to the hydropower systems and other water resource management proposals.
- Redundancy: The water system shall have alternative intakes to allow for redundancy of operation (including emergency backup)
- Access: The intakes should be located within reasonable response perimeter from the Hatchery and shall be easily accessed for maintenance.
- Fish Protection: The intakes should provide minimum risk to anadromous salmonids and resident species where these are anticipated to be present. Fish screening criteria shall meet or exceed 1998 CDFG and NMFS guidelines.
- Maintenance: Both regularly scheduled annual maintenance and minor routine maintenance activities *of* either the intake or water conveyance facilities should be easily accommodated and reasonably accomplished.
- *Long-term* performance: Major components of the intake system shall have a design life of 50 years.

- Water *rights:* The diversion and water intake system should be designed to fully utilize the hatchery's existing water rights, or expanded rights as deemed necessary. Consolidation or relocation of water rights can be considered.

Environmental compliance and permit processes should be completed by July 2001. The following is a list of environmental compliance needs for the proposed project.

- Section 7 of the federal Endangered Species Act (ESA)
- Section 404 of the Clean Water Act
- Section 106 of the National Historic Preservation Act (NHPA)
- Fish and Wildlife Coordination Act (FWCA)
- Section 401 of the Clean Water Act
- Federal Energy Regulatory Commission (FERC) License Amendment (if necessary)
- Section 2080.1, and Section 2081 of the California Endangered Species Act (CESA)

D. Applicability to CALFED ERP Goals and Implementation Plan and CVPIA Priorities

1. ERP Goals and CVPIA Priorities

The action to improve the hatchery's intakes is shown as Action 8 in the AFRP Draft Plan (USFWS 1997) to prevent entrainment of juvenile chinook salmon and steelhead into the hatchery facilities. Action 5, to screen the tailrace of Coleman Powerhouse, to eliminate attraction of adult chinook salmon and steelhead, is also identified.. In this document, CVPIA section 3406 (b)(21) the Anadromous Fish Screen Program, is identified as &he tool. Recent guidance on the "tool" to implement this action is nebulous;

The early life stages of endangered Sacramento River winter-run chinook, threatened Central-Valley spring-run chinook and steelhead and candidate fall/late fall chinook are all imperiled by the unscreened diversions at CNFH.

2. Relationship to Other Ecosystem Restoration Projects

The proposed project directly supports other programs, such as those being implemented under the Central Valley Project Improvement Act, through the Anadromous Fish Restoration Program, Section 3406(b)(17), and the California Salmon, Steelhead Trout and Anadromous Fisheries Program Act of 1988.

Table 3 - Funded Battle Creek Restoration Activities

Description	Applicant	Funding Source	**Status/Relationship** to Proposed Project
Interim Flow Agreement	USBR	CVPIA	Initiated in 1995 & extended to 2001
Enoineering Study of Anadromous Fish Passage in Upper Battle Creek	DWR	CUWA	Final Reconnaissance Report. Includes water temperature data at 28 river stations and flow data at four stations
Decommissioning Report for Select Facilities	USBR	USBR	Final Reconnaissance Report
Battle Creek Salmon and Steelhead Restoration Plan	Kier Assoc.	CUWA	Final Report
Hydrologic Investigations	RMI	USBR	Independent hydrologic & economic model **used** during FERC negotiations
Winter/Spring Run Chinook Salmon Monitoring	USFWS	CVPIA	Includes three ongoing studies which establish baseline data

Watershed Stewardship	Baffle Creek Watershed Conservancy	CALFED	CALFED contract to implement upstream restoration actions
Baffle Creek Watershed Project	Western Shasta Resource Cons. Disbict	CUWA/ CVPIA	Effort to involve local community in project development
Coleman Hatchery Intake Alternatives Study	USFWS	CVPIA	Identified intake design alternatives induding a preferred alternative
Battle Creek Meadow	Landowner	Landowner	Meadow restoration on S. Fork to improve summer flows and stream temperatures
Coleman Hatchery Barrier Weir and Upstream Ladder Improvements	USFWS	CALFED	Improve fish passage on Baffle Creek

CVPIA = Central Valley Project Improvement Act
CUWA = California Urban Water Association

3. Requests for Next-Phase Funding

Previously funded activities associated with this project include:

a) An engineering investigation that identified and analyzed 10 alternatives to improve the Hatchery's water delivery system and meet current fish protection standards. The *Coleman National Fish Hatchery Intake Alternatives Study*, published in June 1999, identified 4 alternatives for further study, including one preferred alternative. Cost: $250,000; Funding Source: CVPIA, AFRP

b) Interim measures to screen existing intake facilities, including:
- Repair of the Intake 3 fish screen and self cleaning mechanism (2999). Cost:. $10,000; Funding Source: CVPIA, AFRP
- Installation of submerged fish screen and diversion at Intake 3 (1999): Cost: $150,000; Funding Source: CVPIA, AFRP
- Install a flapgate in Intake 2 (1999). Cost: $30,000; Funding Source: CVPIA, AFRP
- Install a picket weir to exclude upstream migrating salmon from entering the Coleman Powerhouse tailrace (1999). Cost: $20,000; Funding Source: CVPIA; AFRP

c) Preparation of environmental planning documents, critical analysis of state-of-the-art fish screen designs, and final engineering design for the preferred intake alternative (Phases I & II; In Progress). Cost: $450,000; Funding Source: USBR.

**See Appendix A for currenf project status and additional information on 'Next Phase funding'.*

4. Previous Recipients of CALFED or CVPIA Funding

In FY 98 and 99 AFRP funds amounting to $301,174 were received. These funds were used for interim intake improvements and development of the long-term intake alternatives (i.e., three components 99LB1 $8,174; 98LC1a $224,000; and 98LC1b $69,000).

5. System-Wide Ecosystem Benefits

This project is the perfect example of restoration work that provides system-wide ecosystem benefits. The primary limiting factor to anadromous fish restoration in Battle Creek is impeded passage. Of the upstream and downstream barriers to migration of

anadromous, hydropower diversions, the hatchery's intakes and the hatchery's barrier dam are the three sites of concern. Since the passage impedance at hydropower diversions are being remedied (MOU 1999) and passage is being improved at the hatchery's upstream ladder (USBR 2000)[14], passage improvement at the hatchery's intakes is the outstanding restoration need.

This project is also perfectly aligned with the local landowner's efforts. The Watershed Conservancy seeks to make alterations to man's past actions and once again enable Battle Creek to be home to vast runs of chinook salmon and steelhead trout. The goal of the Watershed Conservancy is to preserve the environmental and economic resources of the Battle Creek watershed through responsible stewardship, liaison, cooperation, and education, and one of the Conservancy's main interests is restoration of salmon for us and future generations (WSRCD 2000)[15]. Screening the intakes will protect naturally produced salmonids and further the Conservancy interests in seeing restored fish populations.

E. Qualifications

U.S. Fish and Wildlife Service: The Northern Central Valley Fish and Wildlife Office (NCVFWO) was established in 1978 as part of the U.S. Fish and Wildlife Service's (Service) federal leadership responsibility to facilitate restoration of Pacific salmonids. Goals of the NCVFWO are to: I) Stabilize or increase the runs of anadromous salmonids in the Sacramento River system; 2) Improve the effectiveness of federal fish propagation facilities in California and Nevada; 3) Protect and restore the productivity of natural habitats in the Sacramento River system; and *4)* Continue development of information and strategies for protecting the natural habitats of the Sacramento River system as migration routes, spawning areas, and nursery areas for anadromous salmonids. Efforts in the Battle Creek Watershed include conducting surveys to obtain adult life history information on spring and winter chinook salmon since 1995, and monitoring juvenile salmonid outmigration since 1998. Biologists with this office will be providing environmental oversight and biological monitoring for all phases of the fish screen and intakes improvement project. Contact: Jim Smith, Project Leader or Tricia Parker, Fishery Biologist/Habitat Restoration Coordinator, NCVFWO, Red Bluff, CA.

U.S. Bureau *of* Reclamation: The Bureau of Reclamation, Mid-Pacific Region will provide engineering services and project management for all phases of the project, and construction administration and management for Phase III (Construction). USBR is currently managing the tasks of environmental compliance and design data collection. Experienced staff from the Mid-Pacific Regional Office, Construction Office, Northern California Area Office, and Denver Technical Services Center (TSC) will be directing or assisting in tasks associated with Phases I, II, and III. The Denver TSC has a wide range of experience in providing concept studies, final designs, model studies, and construction support for fish related facilities, and is currently under contract for engineering support associated with the Battle Creek Watershed Restoration Project. Contact: Meri Moore or Denise Stotts.

National Marine Fisheries Service: NMFS is the federal trustee for anadromous fish and critical habitat affected by this project. The Santa Rosa Field Office of the NMFS Southwest Region will be the contact point for NMFS. NMFS staff will participate in technical review of drafts and final design of the facility improvements and the preparation

of required environmental documents; (including conducting Federal Endangered Species Act section 7 (a) (2) consultations required for actions authorized, funded, or carried out by federal agencies). Contact: John K. Johnson, Dan Free.

F. Cost

1. Budget

See 'Table 1 – Annual and Total Budget' for Fish Screen and Intake Improvements to Coleman National Fish Hatchery on Battle Creek.

2. Cost-Sharing

Funding commitments to date include:

- *Conceptual Planning 8, Design 8, Interim lnfake Improvements:* 1995-1999; FWS $460,000
- *Phases I & II (EnvironmenfalCompliance and Final Design):* 1999-2001; USBR $550,000; U.S. Fish and Wildlife Service $100,000; National Marine Fisheries Service, in-kind services estimated at $80,000

Future cost share includes:

- *,Phase 111 (Construction):* 2007-2003; USBR $550,000; amount of funding requested from CALFED is 3,950,000 oyer 2 years.

G. Local involvement

Representatives of both Tehama County and Shasta County Boards of Supervisors have been involved in Battle Creek restoration planning and were notified in writing of the proposed fish screen and intake improvement project (see Attachments).

We are currently developing a ,public involvement plan for the project, and intend to build, upon public outreach efforts associated with the overall restoration'of Battle Creek by utilizing existing mailing lists, newsletters, Battle Creek Watershed Conservancy newsletters, and work group meetings. Based on preliminary public outreach, we understand the primary concerns of this project to be whether: 1) the project is consistent with overall watershed restoration goals for Battle Creek; or 2) whether the Hatchery will want to claim a riparian water right or apply to the State for additional appropriative water rights. Third party adverse impacts are anticipated to be minimal and will be mitigated in compliance with all applicable regulations and necessary permits. Positive short-term third party economic impacts for the local communities (primarily Manton), are anticipated during construction. All public concerns will be addressed and analyzed during the environmental compliance phase of the project (Phase 1).

Both adjacent and affected landowners are aware of the project and in general support the proposal provided that consideration is given to their needs during project implementation. To date, no landowners have come forward opposing the project, or opposing the overall restoration of salmon and steelhead to Battle Creek." Public meetings for the project will be held during June of 2000 at various locations in the Battle Creek watershed.

Fish Screen and Intake Improvements to Coleman National Fish Hatchery on Battle Creek

U.S. Bureau of Reclamation, Mid-Pacific Region

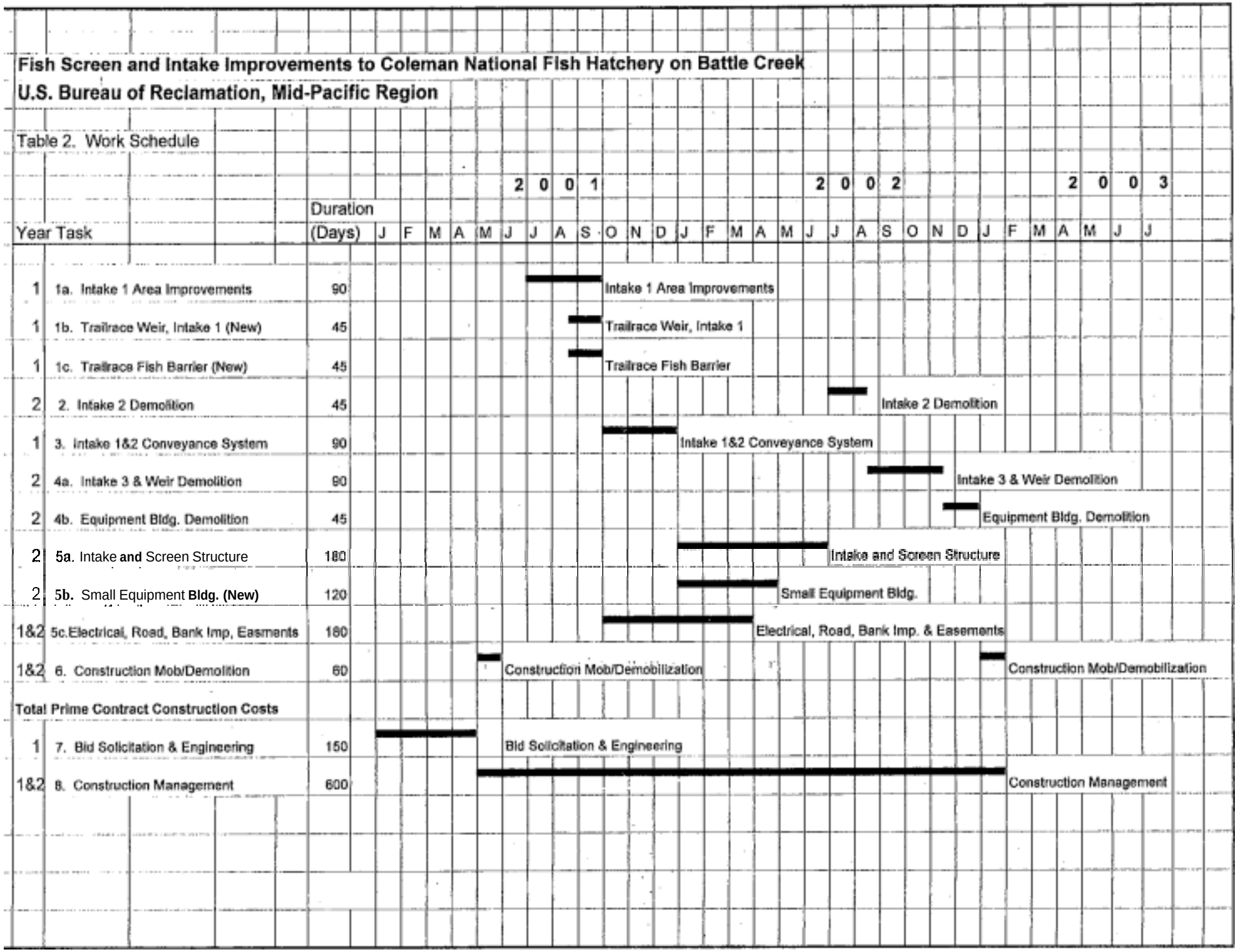
Table 1. Annual/Total Budget

			Prime Contract Subject to Overhead, Profit and Bond								
Year	Task	Direct Labor Hours	Salary	Benefits	Total Labor	Supplies & Expendables	Sub-contracts	Material	Equipment	Overhead, Profit & Bond (20 %)	Total Cost
1	1a. Intake 1 Area Improvements	1600	$56,000	$22,400	$78,400	$7,500	$3,230	$40,670	$14,930	$28,946	$173,676
1	1b. Trailrace Weir, Intake 1 (New)	320	$11,200	$4,480	$15,680	$3,750	$91,570	$10,390	$64,800	$37,238	$223,428
1	1c. Tailrace Fish Barrier (New)	1280	$44,800	$17,920	$62,720	$3,750	$125,480	$8,030	$23,630	$44,722	$268,332
2	2. Intake 2 Demolition	400	$14,000	$5,600	$19,600	$750	$0	$0	$18,000	$7,670	$46,020
1	3. Intake 1 & 2 Conveyance System	1840	$64,400	$25,760	$90,160	$1,500	$312,450	$164,350	$108,000	$135,292	$811,752
2	4a. Intake 3 & Weir Demolition	2200	$77,000	$30,800	$107,800	$0	$4,140	$0	$88,430	$40,074	$240,444
2	4b. Equipment Bldg. Demolition	160	$5,600	$2,240	$7,840	$0	$360	$0	$6,550	$2,950	$17,700
1	5a. Intake & Screen Structure	3120	$109,200	$43,680	$152,880	$6,370	$94,600	$596,660	$270,000	$223,900	$1,343,400
2	5b. Small Equipment Bldg. (New)	240	$8,400	$3,360	$11,760	$1,370	$21,200	$94,500	$3,000	$26,366	$158,196
1&2	5c. Electrical, Road, Bank Improvements & Easements	480	$16,800	$6,720	$23,520	$7,680	$0	$150,750	$93,100	$55,010	$330,060
1&2	6. Construction Mob/Demobilization	920	$32,200	$12,880	$45,080	$30,000	$70,000	$46,000	$10,000	$40,212	$241,292
Total Prime Contract Construction Costs		12560	$439,600	$175,840	$615,440	$62,670	$723,030	$1,110,340	$700,440	642,380	$3,854,300
1	7. Bid Solicitation & Engineering	1280	$89,600	$44,800	$134,400	$8,000	$10,000	$2,000	$500	$0	$152,900
1&2	8. Construction Management	4160	$291,200	$145,600	$436,800	$39,000	$10,000	$5,000	$2,000	$0	$492,800
Total Administrative Costs		5440	$380,800	$190,400	$571,200	$45,000	$20,000	$7,000	$2,500	$0	$645,700
Total Project Cost		18000	$820,400	$366,240	$1,186,640	$107,670	$743,030	$1,117,340	$702,940	$642,380	$4,500,000

Fish Screen and Intake Improvements to Coleman National Fish Hatchery on Battle Creek
U.S. Bureau of Reclamation, Mid-Pacific Region

Table 2. Work Schedule

Year	Task	Duration (Days)
1	1a. Intake 1 Area Improvements	90
1	1b. Trailrace Weir, Intake 1 (New)	45
1	1c. Trailrace Fish Barrier (New)	45
2	2. Intake 2 Demolition	45
1	3. Intake 1&2 Conveyance System	90
2	4a. Intake 3 & Weir Demolition	90
2	4b. Equipment Bldg. Demolition	45
2	5a. Intake and Screen Structure	180
2	5b. Small Equipment Bldg. (New)	120
1&2	5c.Electrical, Road, Bank Imp, Easments	180
1&2	6. Construction Mob/Demolition	60
	Total Prime Contract Construction Costs	
1	7. Bid Solicitation & Engineering	150
1&2	8. Construction Management	600



H. Compliance with Standard Terms and Conditions

The standard terms and conditions are agreeable, and the co-applicants, (Fish and Wildlife Service and Bureau of Reclamation), will be in compliance with the terms and conditions.

I. Literature Cited

[1] 1999 Annual Report, Restoring the Environment, Investing in the Future, Calfed Bay-Delta Program, November, 1999

[2] Coleman National Fish Hatchery California, Intake Alternatives Study, Final Report, USFWS, June, 1999.

[3] "Revised Draft Restoration Plan for the Anadromous Fish Restoration Program," USFWS, May, 1997.

[4] Anadromous Fish Restoration Plan, USFWS, 1997a

[5] Senate Bill 1086 Plan

[6] Restoring Central Valley Streams: A Plan for Action, CDFG,. 1993

[7] Winter-run Chinook Recovery Plan, NMFS, 1997

[8] Shasta Temperature Control Devise EIS. U.S. Bureau of Reclamation, Mid-Pacific Regional Office, 1992.

[9] USFWS (U.S. Fish and Wildlife Service), 1995. Working paper on restoration needs: habitat restoration actions to double natural production of anadromous fish in the Central Valley of California, Volumes 1-3, May 9, 1995. Prepared by the U.S. Fish and Wildlife Service under direction of the Anadromous Fish Restoration Core Group, Stockton, California.

[10] NMFS (National Marine Fisheries'Service),, 1997. Fish Screening Criteria for Anadromous Salmonids

[11] CDFG (California Department of Fish and Game, 1997. Fish Screening Criteria for Anadromous Salmonids

[12] USBR, 1998. Environmental assessment for temporary reduction 'in water diversions from Battle Creek, U.S. Bureau of Reclamation, division of Resources Management, Sacramento,' California.

[13] 1999, Memorandum of Understanding

[14] USBR 2000. Interagency Agreement 00AA200031 [with USFWS] for Improving the Upstream Ladder and Barrier Weir at Coleman National Fish Hatchery (CALFED Action #99-B08)

[15] Western Shasta Resource Conservation District (WSRCD), 2000. Battle Creek Watershed Strategy, prepared for the Battle Creek Watershed Conservancy

[16] Battle Creek Watershed Conservancy letter to U S. Bureau of Reclamation, dated January 13,1999.

J. Threshold Requirements

The following requested forms are attached:

- Local Government Notification
- Environmental Compliance and Land Use Checklists
- Additional Standard Clauses
- Contracts with United States

EA Engineering, Science, and Technology

EA Portland, Oregon Office
8215 Tualatin-Sherwood Road, Suite 200
Tualatin, Oregon 97162
Telephone: 503-691-7000
Fax: 503-691-7001

~ Draft ~

April 20, *2000*

Mr. William Wright
Shasta Land Services
300 Knollcrest Drive
Redding, **CA 96002**

Dear Mr. Wright:

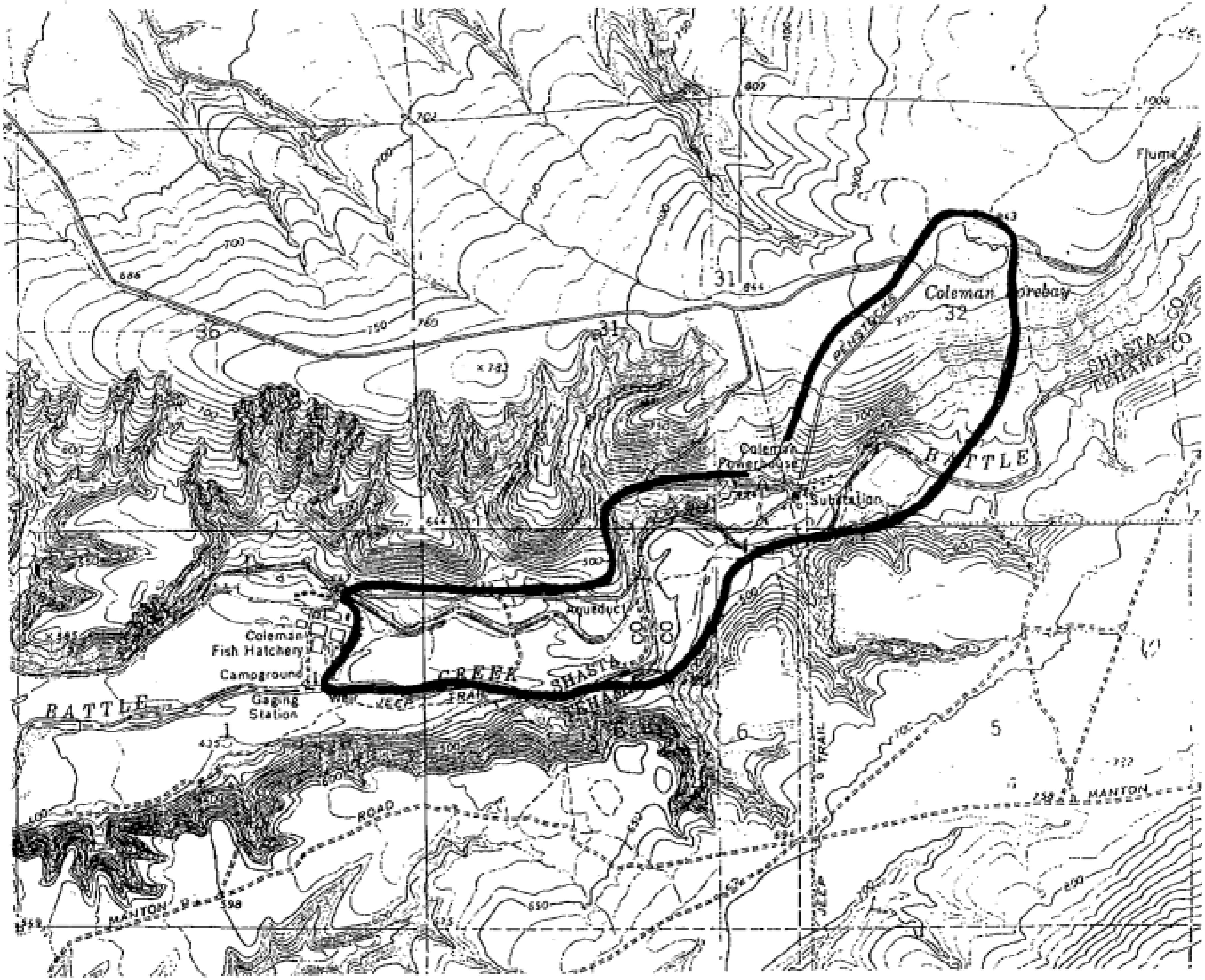
I **am** writing **regarding** a project my **firm**, EA Engineering, is conducting for the U.S. Fish and Wildlife Service at the Coleman National Fish Hatchery. The **purpose** of the project **is** to select a preferred design for new **fish** screens and intakes at the hatchery in **a** manner that minimizes short and long-term environmental impacts **on** Battle Creek. Mike Keehler informed me that **he** had talked with **you** briefly about this project, **and** EA's need to access lands managed by Shasta Land Services.

The work in question that would involve access ***to*** your property **is** a small but important component **of** this project; to characterize the plant and animal communities **adjacent** to the creek that may be affected **by** construction activities. This will involve **a 2-3 day** field survey in which **EA** biologists will walk **dong** Battle Creek in the vicinity of the hatchery, within an area that **is** roughly between the hatchery **and the** PG&E substation. **The** attached map shows the approximate **boundaries** for **our** fieldwork. **As** noted above, there ***is*** land managed **by** Shasta Land Services that we **would** hope ***to*** include in this **effort.** Can we access these areas? It is important that **we** get to **the** field as soon **as** possible due to limited flowering times of many of the plant species. Ideally, the work **would** be done **next** week, **April** 26th-28th by two **EA** biologists: Alicia **Pool** (wildlife biologist) and Jane Valerius (botanist).

I appreciate your time and attention, and would be happy to answer **any questions** you may have **on ow** project. Please feel free to call me in **our** Portland office at **(503) 691-**7000. Thank **you** very much Mr. Wright and **I** look forward *to* hearing from you.

Sincerely yours,

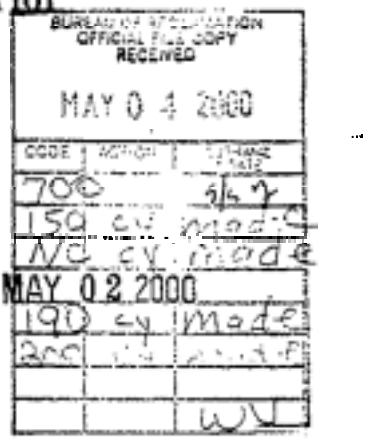
Michael B. **Bonoff**
Senior Scientist/Area **Manager**


Coleman Forebay
Flume
Penstocks
Coleman Powerhouse
Substation
BATTLE
CREEK
Aqueduct
SHASTA CO
TEHAMA CO
Coleman Fish Hatchery
Campground
Gaging Station
JEEP TRAIL
MANTON ROAD
MANTON

United States Department of the Interior

FISH AND WILDLIFE SERVICE

California/Nevada Operations Office
2800 Cottage Way, Room W-2606
Sacramento, California 95825-0509



PD 5/4/00

Mr. George Russell
Chair, Tehama County Board of Supervisors
PO Box 250
Red Bluff, California 96080

Dear Mr. Russell:

This letter is to inform you of proposal efforts unde'rway for funding Phase III of an ongoing project to construct fish screens and improved water intake structures at the Coleman National Fish Hatchery (Hatchery), in Shasta County, California, on the north bank of Battle Creek. A Proposal Solicitation Package (PSP) for this effort is being prepared for submittal to the CALFED Bay-Delta Program by the U.S. Fish and Wildlife Service in conjunction with the Bureau *of* Reclamation. Upon completion, a copy of the PSP will be made available to you.

Battle Creek is one of the three remaining Sacramento River tributaries in which natural anadromous salmonids continue to exist, although annual runs have been severely reduced by hydropower generation and hatchery operations. Efforts are currently underway to mitigate these adverse impacts and enhance habitat conditions necessary to restore native runs of salmonids to 42 miles of Battle Creek above the Hatchery.

Integral to successful implementation *of* the Battle Creek Restoration Project is the need to upgrade the Hatchery's water intake facilities to be more protective of in-stream aquatic resources. A June 1999 assessment of the existing intake system concluded that a number of deficiencies existed, and the intakes do not currently meet National Marine Fisheries Service (NMFS) and State of California guidelines for the protection of salmonids at water diversions.

Prior planning efforts identified 10 intake design alternatives, of which 3 have been selected for further analysis. Environmental compliance and permitting activities have commenced under Phase I of the project, and a draft Environmental Assessmenfflnitial Study is due in September 2000. Phase II involves preparing final designs of the selected alternative, and Phase III is project construction. The PSP is for funding assistance associated with Phase III.

Should you require further information, please contact Meri Moore, Project Manager, Bureau of Reclamation, at 916/978-5086 (TDD 916/978-5608).

Sincerely,

Mary Ellen Mueller

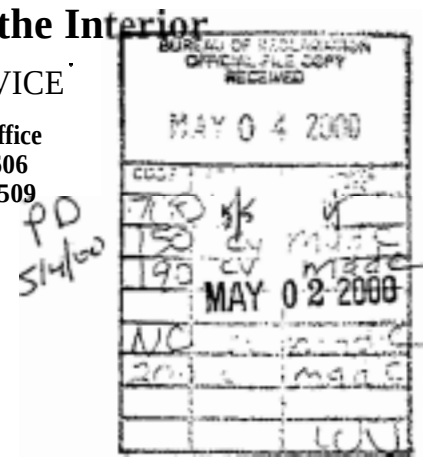
Mary Ellen Mueller, Ph.D.
California/Nevada Fisheries Supervisor

ENV 4.10
ENF
6292

cc: Meri Moore
Bureau of Reclamation
2800 Cottage Way (MP-700)
Sacramento, California 95825

Carl Havener
Secretary, Teharna County Fish and Game Commission
PO Box 250
Red Bluff, California 96080

United States Department of the Interior
FISH AND WILDLIFE SERVICE
California/Nevada Operations Office
2800 Cottage Way, Room W-2606
Sacramento, California 95825-0509



PD 5/4/00

Mr. Ron Hill
Director, Public Works
1855 Placer Street
Redding, California 96001

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Should you require further information, please contact Meri Moore, Project Manager, Bureau of Reclamation, at 916/978-5086 (TDD 9161978-5608).

Sincerely,

Mary Ellen Mueller

Mary Eilen Mueller, Ph.D.
California/Nevada Fisheries Supervisor

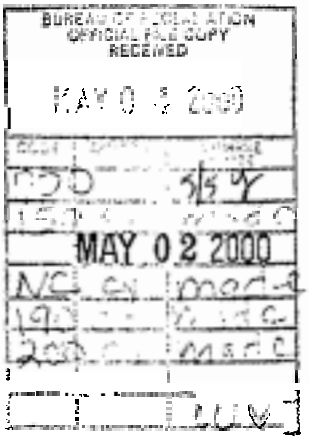
ENV 4.10
CVP
6289

cc: Meri Moore
Bureau of Reclamation
2800 Cottage Way (MP-700)
Sacramento, California 95825

United States Department of the Interior

FISH **AND** WILDLIFE SERVICE

California/Nevada **Operations Office**
2800 Cottage Way, Room **W-2606**
Sacramento, **California 95825-0509**



Mr. Irwin Fust
Chair, Shasta County Board of Supervisors
1815 Yuba Street, Suite 1
Redding, California 96001

Dear Mr. Fust:

This letter is to inform you of proposal efforts underway for funding Phase III of an ongoing project to construct fish screens and improved water intake structures at the Coleman National Fish Hatchery (Hatchery), in Shasta County, California, on the north bank of Battle Creek. A Proposal Solicitation Package (PSP) for this effort is being prepared for submittal to the CALFED Bay-Delta Program by the U.S. Fish and Wildlife Service in conjunction with the Bureau of Reclamation. Upon completion, a copy of the PSP will be made available to you.

Battle Creek is one of the three remaining Sacramento River tributaries in which natural anadromous salmonids continue to exist, although annual runs have been severely reduced by hydropower generation and hatchery operations. Efforts are currently underway to mitigate these adverse impacts and enhance habitat conditions necessary to restore native runs of salmonids to 42 miles of Battle Creek above the Hatchery.

Integral to successful implementation of the Battle Creek Restoration Project is the need to upgrade the Hatchery's water intake facilities to be more protective of in-stream aquatic resources. A June 1999 assessment of the existing intake system concluded that a number of deficiencies existed, and the intakes do not currently meet National Marine Fisheries Service (NMFS) and State of California guidelines for the protection of salmonids at water diversions.

Prior planning efforts identified 10 intake design alternatives, of which 3 have been selected for further analysis. Environmental compliance and permitting activities have commenced under Phase I of the project, and a draft Environmental Assessment/Initial Study is due in September 2000. Phase II involves preparing final designs of the selected alternative, and Phase III is project construction. The PSP is for funding assistance associated with Phase III.

Should you require further information, please contact Meri Moore, Project Manager, Bureau of Reclamation, at 916/978-5086 (TDD 9161978-5608).

Sincerely,

Mary Ellen Mueller

Mary Ellen Mueller, Ph.D.
California/Nevada Fisheries Supervisor

ENV-4.10
CVP
6290
3745

cc: Meri Moore
Bureau of Reclamation
2800 Cottage Way (MP-700)
Sacramento, California 95825

Environmental Compliance Checklist

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for finding*

1. **Do** any of the actions included in the proposal require compliance with either the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), **or** both?

✓ YES **NO**

2. If you answered yes to # **1,** identify the lead governmental agency for CEQA/NEPA compliance.

U.S. Bureau **of** Reclamation
Lead Agency for NEPA

3. If you answered **no** to # **1,** explain why CEQA/NEPA compliance is not required **for** the actions in the proposal.

4. If CEQA/NEPA compliance is required, describe how the project will comply with either **or** both of these laws. Describe where the project is in the compliance process and the expected date **of** completion.

An Environmental Assessment/Initial Study was initiated in March 2000, with an expected completion date **of** September 2000.

5. Will the applicant require access across public **or** private property that the applicant does not **own** to accomplish the activities in the proposal?

✓ YES **NO**

If yes, the applicant must attach written permission for access from the relevant property owner(s). Failure to include written permission for access may result in disqualification of the proposal during the review process. Research and monitoring field projects for which specific field locations have not been identified will be required to provide access needs and permission for access with 30 days of notification of approval.

6. Please indicate what permits or other approvals may be required for the activities contained in your proposal. Check all boxes that apply.

LOCAL		
Conditional use permit		
Variance		
Subdivision Map Act approval		
Grading permit		
General plan amendment		
Specific plan approval		
Rezone		
Williamson Act Contract cancellation		
Other _____ (please specify)		
None required	✓	
STATE		
CESA Compliance	✓	(CDFG)
Streambed alteration permit	✓	(CDFG)
CWA § **401** certification	✓	(RWQCB)
Coastal development permit		(Coastal Commission/BCDC)
Reclamation Board approval		
Notification		(DPC, BCDC)
Other _____ (please specify)		
None required		
FEDERAL		
ESA Consultation	✓	(NMFS)
Rivers & Harbors Act permit	✓	(ACOE)
CWA § **404** permit	✓	(ACOE)
Other _____ (please specify)		
None required		

DPC = Delta Protection Commission
CWA =Clean Water Act
CESA = California Endangered Species Act
USFWS = U.S. Fish and Wildlife Service
ACOE = U.S. Army *Corps* of Engineers

ESA =Endangered Species Act
CDFG = California Department of Fish and Game
RWQCB = Regional Water Quality Control Board
BCDC= Bay Conservation and Development Comm

Land Use Checklist

All applicants must fill out this Land Use Checklist for their proposal. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.*

1. Do the actions in the proposal involve physical changes to the land (i.e. grading, planting vegetation, or breeching levees) or restrictions in land use (i.e. conservation easement or placement of land in a wildlife refuge)?

✓ YES NO

2. If **NO** to # **1,** explain what type of actions are involved in the proposal (i.e., research only, planning only).

3. **If** YES to # **1,** what **is** the proposed land **use** change or restriction under the proposal?

4. If YES to # **1,** is the land currently under a Williamson Act contract?

YES J NO

5. If YES to # **1,** answer the following:

Current land use	Agriculture (cattle grazing)
Current zoning	Agriculture
Current general plan designation	Agriculture

6. If YES to #1, is the land classified as Prime Farmland, Farmland of Statewide Importance or Unique Farmland **on** the Department of Conservation Important Farmland Maps?

YES ✓ NO DON'T KNOW

7. If YES to # **1,** how many acres **of** land will be subject to physical change or land use restrictions under the proposal?

< 5 acres

8. If YES to # **1,** is the property currently being commercially farmed or grazed?

YES ✓ NO

9. **If** YES to #S, what are the number of employees/acre _____
the total number of employees _____

10. Will the applicant acquire any interest in land under the proposal (fee title or a conservation easement)?

YES ____ NO J

11. What entity/organization will hold the interest? Federal Government (USA)

12. **If YES** to # **10,** answer the following:

Total number of acres to be acquired under proposal: Unknown (likely < 5 acres)
Number of acres to be acquired in fee: _____
Number of acres to be subject to conservation easement: _____

13. For all proposals involving physical changes to the land or restriction in land **use,** describe what entity or organization will:

manage the property: BLM
provide operations and maintenance services: USFWS – Coleman National Fish Hatchew
conduct monitoring: _____

14. **For** land acquisitions (fee title or easements), will existing water rights also be acquired?

YES ____ NO J

15. **Does** the applicant propose any modifications to the water right or change in the delivery of the water?

YES ✓ NO ____

16. **If YES** to **# 15,** describe _____

Future water demand at CNFH is largely a matter of speculation. The intake improvement study completed by Sverdrup, 1999, includes the planning assumption that the hatchery's water need could increase by one-third (35cfs) in the future. If water demand at CNFH increases in the future, then additional water rights will be required. If this is the case, then the Bureau of Reclamation or the Fish and Wildlife Service will need to petition the State to make the necessary changes to the existing riparian/appropriative water rights.

STANDARD CLAUSES – CONTRACTS WITH THE UNITED STATES

Workers' Compensation Clause. Contractor affirms that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor affirms that it will comply with such provisions before commencing the performance of the work under this contract. This provision shall apply to the extent provided by federal laws, rules and regulations.

Claims Dispute Clause. Any claim that Contractor may have regarding the performance of this agreement including, but not limited to, claims for additional compensation or extension of time, shall be submitted to the Director, Department of Water Resources, within thirty days of its accrual. State and Contractor shall then attempt to negotiate a resolution of such claim and process an amendment to this agreement to implement the terms of any such resolution. However, Contractor does not waive any rights or duties it may have as may be provided by federal laws, rules and regulations.

Nondiscrimination Clause. During the performance of this contract, the recipient, contractor and its subcontractors shall not deny the contract's benefits to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age (over 40), or sex. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination. Contractor shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.), the regulations promulgated thereunder (California Administrative Code, Title 2, Sections 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code Sections 11135 - 11139.5), and the regulations or standards adopted by the awarding State agency to implement such article. Contractor or recipient shall permit access by representatives of the Department of Fair Employment and Housing and the awarding State agency upon reasonable notice at any time during the normal business hours, but in no case less than 24 hours' notice, to such of its books, records, accounts, other sources of information and its facilities as said Department or Agency shall require to ascertain compliance with this clause. Recipient, Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the contract.

Availability of Funds. Work to be performed under this contract is subject to availability of funds through the State's normal budget process.

Audit Clause. For contracts in excess of $10,000, unless otherwise provided by federal laws, rules or regulations, the contracting parties shall be subject to the examination and audit of the State Auditor for a period of three years after final payment under the contract. (Government Code Section 8546.7).

Payment Retention Clause. Ten percent of any progress payments that may be provided for under this contract shall be withheld per Public Contract Code Sections 10346 and 10379 pending satisfactory completion of all services under the contract.

Reimbursement Clause. If applicable, travel and per diem expenses to be reimbursed under this contract shall be at the same rates the State provides for unrepresented employees in accordance with the provisions of Title 2, Chapter 3, of the California Code of Regulations. Contractor's designated headquarters for the purpose of computing such expenses shall be: FEDERAL STANDARD PER DIEM RATE

Americans With Disabilities Act. By signing this contract, Contractor assures the State that it complies with the Americans With Disabilities Act (ADA) of 1990, (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA.

Conflict of Interest. Current State Employees: a) No State officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any State agency, unless the employment, activity or enterprise is required as a condition of regular State employment. b) No State officer or employee shall contract on his or her own behalf as an independent contractor with any State agency to provide goods or services.

Former State Employees: a) For the two-year period from the date he or she left State employment, no former State officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any State agency. b) For the twelve-month period from the date he or she left State employment, no former State officer or employee may enter into a contract with any State agency if he or she was employed by that State agency in a policy-making position in the same general subject area as the proposed contract within the twelve-month period prior to his or her leaving State service.

Agreement No.:_____

Exhibit:_____

ADDITIONAL STANDARD CLAUSES

Recycled **Materials.** Contractor hereby certifies under penalty of perjury that _____ (enter value or "0") percent of the materials, goods and supplies offered or products used in the performance of this Agreement meet or exceed the minimum percentage *of* recycled material **as** defined in Sections 12161 and 12200 *of* the Public Contract Code.

Severability. If any provision of this Agreement is held invalid or unenforceable by any court of final jurisdiction, it is the intent of the parties that all other provisions of this Agreement be construed to remain fully valid, enforceable, and binding on the parties.

Governing **Law.** This Agreement is governed by and shall be interpreted in accordance with the laws of the State of California.

Y2K Language. The Contractor warrants and represents that the goods or services sold, leased, or licensed to the State of California, its agencies, or its political subdivisions, pursuant to this Agreement are "Year 2000 compliant." For purposes of this Agreement, a good or service is Year 2000 compliant if it will continue to fully function before, at, and after the Year 2000 without interruption and, if applicable, with full ability to accurately and unambiguously process, display, compare, calculate, manipulate, and otherwise utilize date information. This warranty and representation supersedes all warranty disclaimers and limitations and all limitations on liability provided by or through the Contractor.

Child **Support** Compliance **Act.** For any agreement in excess of $100,000, the Contractor acknowledges in accordance therewith, that:

1. The Contractor recognizes the importance of child and family support obligations and shall fully comply with all applicable **State** and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with Section 5200) of Part 5 of Division **9** of the Family Code; and

'2. The Contractor, to the best of its knowledge; is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.